

Serial No. 09/910,497  
Response to Office Action Mailed May 31, 2006

Docket No.: 290397.0007  
(97541.00007)

### **REMARKS**

Claims 1-50 were previously filed. Claims 4-5 and 14-26, 28-29 and 43 were previously cancelled. Claims 30-39 were previously withdrawn. Accordingly, claims 1-3, 6-13, 27, 40-42 and 44-50 are currently pending.

In the May 31, 2006 Office Action, the examiner has withdrawn the rejection of claims 1-3, 6-13, 27, 40-42 and 44-50 under 35 U.S.C. § 102(b) as being anticipated by Evans, WO 96/37570. The examiner has also withdrawn the previous rejections of claims 1-3, 6-13, 27, 40-42 and 44-50 under 35 U.S.C. § 112. The examiner has also withdrawn the provisional rejection under the judicially created doctrine of obviousness-type double patenting in view of copending application publication no. US 2002/0171063 A1 and copending application publication no. US 2002/0020828 A1.

The examiner has rejected claims 1-3, 6-13, 27, 40-42 and 44-50 under 35 U.S.C. § 112, first paragraph on the grounds that the claim language "greater than 60 percent to about 70 percent" recited in claims 1 and 27 does not have sufficient basis in the specification. For at least the reasons set forth below, the applicants request that this grounds for rejection be withdrawn, and that the claims currently pending be allowed.

As recited in claims 1-3, 6-13, 27, 40-42 and 44-50 as amended, the present application is directed to a non-aqueous heat transfer fluid having reduced toxicity and methods for reducing the toxicity of ethylene glycol based heat transfer fluids. As set forth in claim 1 as amended, the heat transfer fluid comprises between greater than 60 percent by weight and about 70 percent by weight (of the total weight of diols in the fluid) ethylene glycol, at least one additional diol which acts as an inhibitor for ethylene glycol poisoning,

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and at least one corrosion inhibitor additive that is soluble in ethylene glycol and the additional diol.

As recited in claims 27, 40-42 and 44-50 as amended, the present application is also directed to methods for reducing the toxicity of existing ethylene glycol based fluids by adding propylene glycol, which reduces the toxicity of the ethylene glycol based fluid. As recited in claim 27 as amended, after addition of the propylene glycol, the resulting heat transfer fluid contains a concentration of ethylene glycol by weight that is between greater than 60 percent and about 70 percent of the total weight of the propylene glycol and the ethylene glycol in the fluid.

The examiner's sole ground for rejection is that the limitation in the amended claims reciting a range for ethylene glycol of between greater than 60 percent and about 70 percent by weight of the total weight of the propylene glycol and the ethylene glycol in the fluid. In the Office Action, the examiner's only stated reason for the rejection is that "the specification does not provide sufficient basis for choosing the range [between] greater than 60 percent to about 70 percent." The examiner has not provided sufficient reason to reject the claims on this basis.

The upper limit of 70 percent by weight ethylene glycol is plainly supported, as throughout the specification and in the preferred embodiments, compositions containing 70 percent by weight ethylene glycol are described. In addition, the specification contains numerous statements that the invention at the time of filing included heat transfer fluids which contained propylene glycol and less than 70 percent by weight ethylene glycol. For example, the specification states:

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The inventors have discovered that when PG is mixed with EG, PG acts as an antidote for EG poisoning, thereby rendering mixtures of PG and EG essentially non-toxic even up to EG proportions of 70 percent by weight.

Paragraph 0028

The inventors have discovered that PG acts as an antidote for EG poisoning when it is mixed with EG.

Paragraph 0048

The non-aqueous heat transfer fluid may contain EG in any amount ranging between 0 percent by weight to about 70 percent by weight of the total weight of EG and PG in the fluid.

Paragraph 0049

Further support can be found, for example, in paragraphs 0068-0071.

“The function of the description requirement is to ensure that the inventor had possession, as of the filing date of the application relied on, the specific subject matter later claimed by him; how the specification accomplishes this is not material.” In re Wertheim, 541 F.2d 257, 262 (C.C.P.A. 1976). “The written description requirement does not require identical descriptions of claimed compounds, but it requires enough disclosure in the patent to show one of skill in the art that the inventor ‘invented what is claimed’.” Union Oil Co. of California v. Atlantic Richfield Co., 208 F.3d 989, 1001 (Fed. Cir. 2000). The disclosure in the specification cited above, as well as other discussions of the claimed heat transfer fluid in the specification, is clearly sufficient to show one of skill in the art that the applicants had contemplated heat transfer fluids containing any amount of ethylene glycol up to about 70 percent by weight.

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In In re Wertheim, the Court of Customs and Patent Appeals reversed the rejection of claims that had been amended from a broader range of 25% to 60% by weight to “between 35% and 60% by weight.” The claims were rejected during examination for not containing literal support in the specification. The court held that this was not enough to support the rejections. The court stated:

If lack of literal support alone were enough to support a rejection under § 112, then the statement of *In re Lukach*, 442 F.2d at 969 . . . that “the invention claimed does not have to be described *in ipsis verbis* in order to satisfy the description requirement of § 112,” is empty verbiage.

541 F.2d at 265. The court noted that applicants frequently amend their applications to claim less than what is described in an application, but all that is required is that specification reasonably describe what is claimed. Id. at 263. “The burden of showing that the claimed invention is not described in the specification rests on the PTO in the first instance, and it is up to the PTO to give reasons why a description not *in ipsis verbis* is insufficient.” Id. at 265.

The present application specifically describes the non-aqueous heat transfer fluid as containing any amount of ethylene glycol between 0 percent by weight and 70 percent by weight, and states that the reduced toxicity of the fluid containing ethylene glycol and propylene glycol is observed at ethylene glycol concentrations of “up to” 70 percent by weight. These disclosures alone are sufficient to meet the written description requirement.

Moreover, the specification clearly states that the inventors discovered that the addition of propylene glycol to ethylene glycol based, non-aqueous heat transfer fluids at higher concentrations of ethylene glycol than previously thought possible, even up to 70 percent by weight. One skilled in the art reading the specification would clearly understand this to mean that the invention encompassed heat transfer fluids containing less than 70

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percent ethylene glycol. Accordingly, the disclosure satisfies the written description requirement.

In the Office Action, the examiner has not provided any reason why the specification is insufficient to support the claim language "greater than 60 percent to about 70 percent" as required by In re Wertheim. As set forth above, the lower limitation of "greater than 60 percent" does not require *in ipso verbis* support, and there is ample support in the specification demonstrating to one skilled in the art that the inventors possessed the claimed invention at the time of filing. Accordingly, the rejection under 35 U.S.C. § 112 should be withdrawn.

Finally, as described at pages 31-32 of the priority document, tests conducted on heat transfer fluids having 50 percent by weight ethylene glycol and 50 percent by weight propylene glycol showed that the fluid was essentially non-toxic, and had results similar to the tests for a 70/30 mixture of ethylene glycol and propylene glycol. This provides further support for the fact that, as one skilled in the art would expect from the specification, the reduced toxicity of the fluid occurs even when the level of ethylene glycol is reduced below 70 percent by weight.

In view of the foregoing remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes after considering these remarks, that the application is not in condition for allowance, and in particular if a terminal disclaimer is required for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

Because the reasons above are sufficient to traverse the rejection, Applicants have not explored, nor do they now present, other possible reasons for traversing such rejections.

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Nonetheless, Applicants expressly reserve the right to do so, if appropriate, in response to any future Office Action.

No fee is believed to be required. However, if a fee is required or otherwise necessary to cover any deficiency in fees previously paid, authorization is hereby given to charge our Deposit Account No. 50-3569.

Respectfully submitted,

Date: July 26, 2005

By: Eric E. Grondahl  
Eric E. Grondahl  
Registration No. 46,741  
Attorney for Applicant

PTO Correspondence Address:

McCarter & English, LLP  
CityPlace I  
185 Asylum Street  
Hartford, CT 06103  
Phone: (860) 275-6704  
Fax: (860) 724-3397

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